National Transportation Safety Board
Aviation Accident Final Report

Location:	ASHEBORO, NC	**Accident Number:**	MIA97FA179A
Date & Time:	06/04/1997, 1751 EDT	**Registration:**	N804DA
Aircraft:	Piper J3C-65	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Cessna 305E, N305JH, had been airborne about 11 minutes, & Piper J3C-65, N804DA, had been airborne about 2 minutes, when a collision of the 2 airplanes occurred. The collision occurred about 2 miles west of the departure airstrip. A witness said he 1st heard a loud sound, then saw both airplanes flying northeast bound. When he 1st saw them, the airplanes appeared to be side by side at the same altitude with the left airplane in a slight bank & the right airplane in a right bank. Both airplanes then entered uncontrolled descent & crashed. No adverse weather was reported. There was evidence that when the midair occurred, the Piper was below & to the left of the Cessna. The upper surface of the left wing of the Piper collided with the left side of the Cessna's empennage just forward of the left horizontal stabilizer. Several of the longerons on the Cessna airplane were damaged, & the cambered surface of the left wing of the Piper airplane was damaged. Exam of the airframes, engines, & flight controls of both airplanes revealed no evidence of preimpact failure or malfunction. The pilot of the Piper had logged 2.0 hrs of formation flying time. The pilot of the Cessna, who was the son of the Piper pilot, was a military pilot & had received military flight training in formation flying.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of the pilots in both airplanes to see and/or avoid a collision with each other.

Findings

Occurrence #1: MIDAIR COLLISION
Phase of Operation: CRUISE

Findings
1. (C) VISUAL LOOKOUT - INADEQUATE - PILOT IN COMMAND
2. (C) VISUAL LOOKOUT - INADEQUATE - PILOT OF OTHER AIRCRAFT
3. (C) CLEARANCE - NOT MAINTAINED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On June 4, 1997, about 1751 eastern daylight time, a Piper J3C-65, N804DA, and a Cessna 305E, N305JH, both registered to the Polyspray Corporation, collided in-flight near Asheboro, North Carolina. Visual meteorological conditions prevailed at the time and no flight plan was filed for either flights. The Piper airplane was substantially damaged and the private-rated pilot, the sole occupant, was fatally injured. The Cessna airplane was destroyed and the commercial-rated pilot, the sole occupant, was also fatally injured. The time of departure of the Piper airplane from the owner's airstrip was about 2 minutes before the accident. The Cessna flight originated about 11 minutes earlier from the same departure airstrip as the Piper airplane.

On a flight before the accident flight, both pilots were observed to land in the Cessna 305E airplane at the owner's airstrip where the father was observed to exit the airplane. The son then departed the airstrip in the Cessna airplane and orbited 2 to 3 times around the airstrip. During that time the father went to the house and called his other son and advised him that his brother was flying. The father did not mention to his son that he was planning on flying after the phone call ended.

A witness near the accident site reported seeing the airplanes flying northeast bound side by side in the same direction then observed the wing tips of each airplane collide. He then observed the airplanes turn away from each other and lost sight of the airplanes. Another witness near the accident site reported first hearing the sound of an airplane flying low then heard a "loud" popping sound. He then observed the Cessna 305E airplane pitch straight down from an altitude of about 75 feet, and heard the impact and subsequent explosion. The airplane was not spinning during the descent. Another witness reported hearing the engine of the Cessna airplane quit after the collision.

PERSONNEL INFORMATION

Information pertaining to the pilot of the Piper airplane is contained on page 3 of the NTSB Factual Report-Aviation MIA97FA179A. Additionally, he was given formation flying instruction in August 1996, lasting about 30 minutes. Review of his pilot logbook from April 21, 1995, to the day before the accident flight, revealed he only documented two flights lasting a total of 2.0 hours which state "formation flying." Earlier in the week one of the witnesses reported seeing both airplanes flying in the same area and observed one airplane either crossing over or below the other.

Information pertaining to the pilot of the Cessna airplane is contained on page 3 of the NTSB Factual Report-Aviation MIA97FA179B. Additionally, he was a C-130 aircraft commander in the U.S. Air Force. According to Air Force personnel, he had received military training in formation flying and had accumulated a total of about 2,215 flight hours in military and civilian aircraft.

AIRCRAFT INFORMATION

Information pertaining to the Piper airplane is contained on page 2 of the NTSB Factual Report-Aviation and Supplements A and B, in MIA97FA179A. Additionally, the airplane was not equipped with an electrical system and the airplane fabric was painted completely "olive."

A portable VHF receiver was found at the crash site; the frequency was not determined.

Information pertaining to the Cessna airplane is contained on page 2 of the NTSB Factual Report and Supplements A and B, in MIA97FA179B. Additionally, the airplane was painted olive in color with each wing tip painted red. Also, circumferential stripes each 3 inches wide were painted on the fuselage about 24 inches forward of each horizontal stabilizer. An Air Force insignia in the color of red, white and blue was also on the left side of the fuselage.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed in the area at the time of the accident. Additional information may be obtained on page 4 of each NTSB Factual Report-Aviation in MIA97FA179A and MIA97FA179B. Additionally, there was no record of either pilot obtaining a weather briefing through the FAA or DUAT.

COMMUNICATIONS

There was no record of communications with any FAA Air Traffic Control Facility during the accident flight.

WRECKAGE AND IMPACT INFORMATION

Examination of the open field where the Piper airplane crashed showed that it impacted while in a nose down attitude on a magnetic heading of about 235 degrees with the fuselage bent over the wings. There was no evidence of post crash fire. Examination of the elevator, rudder, and aileron flight controls revealed no evidence of preimpact failure or malfunction. Examination of the cambered surface of the left wing revealed the leading edge was compressed down about 48 inches outboard from the wing root area. Additionally, red paint transfer about 3 inches in width and rivet head markings were noted from that position about 30-degrees aft along the leading edge of the wing. The red paint transfer continues and combines with blue paint transfer at about the midpoint of the wing on the leading edge of the wing. The red paint transfer continues to the outboard section along the leading edge of the left wing. Chordwise crushing was noted on the leading edge of the left wing about from midspan outboard. Examination of the main spar of the left wing revealed the spar web was bent aft at a 90-degree angle, about 62 inches outboard from the wing root. The leading edge of the right wing exhibited complete chordwise crushing of the leading edge. All components necessary to sustain flight were attached to the airframe. The engine was removed from the airplane for further examination.

Examination of the engine revealed crankshaft, camshaft, and valve train continuity. Fuel was observed in the line to the carburetor and fuel was also found in the carburetor; no contaminants were noted. Impact damage to each magneto was noted but coil output of each magneto was verified. Examination of the propeller revealed that both blades were bent aft and chordwise scratches were noted on both of the propeller blades. One of the blades exhibited a slight forward bend at the blade tip. The leading edge of the other blade was twisted towards the low pitch position and gouges were noted on the leading edge of that blade.

Examination of the crash site of the Cessna airplane revealed it impacted the ground in an open field on a magnetic heading of about 200 degrees while in a nose low attitude. The airplane was inverted on a heading of 225 degrees magnetic with fire damage to an area to the right and forward of the initial impact point. Both wings, the cockpit, and section of the fuselage were destroyed by the fire. The propeller which separated from the engine was found

in the immediate vicinity of the crash site. Rupture of each fuel tank was noted. All components necessary to sustain flight were partially or completely attached to the airframe or were in the immediate vicinity of the crash site. Examination of the rudder, elevator, and aileron flight controls revealed no evidence of preimpact failure or malfunction. The left and right flap actuators were measured and found to be extended 4.250 and 4.1875 inches respectively. The flap position was not determined. Chordwise crushing was noted to the complete span on the leading edges of both wings. Examination of the left side of the fuselage about 30 inches forward of the left horizontal stabilizer revealed a crease similar in shape to the flattened leading edge segment of the left wing of the Piper airplane. The crease was at about a 45-degree angle on the left side of the fuselage. Examination of the red circumferentially painted 3-inch lines located on the left side fuselage forward of the horizontal stabilizer and also the red, white, and blue Air Force Insignia on the left side of the fuselage revealed 45- degree scratches from front to rear. Additionally, two longerons on the left side of the fuselage in the area of the crease were damaged. The engine was transported to a nearby facility for examination.

Examination of the engine revealed that the propeller was separated and the propeller crankshaft flange was impact damaged. Crankshaft, camshaft, and valve train continuity was verified. The left magneto was separated from the engine but the right magneto was secured and properly timed to the engine. Both magneto coils produced spark when each magneto was rotated by hand. Examination of the carburetor revealed that the inlet screen was clean. The carburetor was not further disassembled. Examination of the separated propeller revealed that both blades exhibited evidence of torsional twisting with chordwise scratches and nicks on the leading edges of both blades.

MEDICAL AND PATHOLOGICAL

Postmortem examination of the pilot of the Piper airplane was performed by Keith L. Lehman, M.D., Pathologist, Office of the Chief Medical Examiner, Chapel Hill, North Carolina. The cause of death was listed as multiple traumatic injuries. Toxicological analysis of specimens was performed by the Chapel Hill Medical Examiner's Office and the FAA Accident and Research Laboratory (CAMI). The results of analysis by the Medical Examiner's Office was negative for ethanol. The results of analysis by CAMI was negative for ethanol and tested drugs. Carbon monoxide and cyanide testing was not performed.

Postmortem examination of the pilot of the Cessna airplane was performed by Thomas B. Clark III, M.D., Pathologist, Office of the Chief Medical Examiner, Chapel Hill, North Carolina. The cause of death was listed as multiple traumatic injuries. Toxicological analysis of specimens was performed by the Medical Examiner's Office and CAMI. The results of analysis by the Medical Examiner's Office was negative for ethanol and less than 10 percent carbon monoxide saturation. The results of analysis by CAMI was negative for carbon monoxide, cyanide, volatiles, and tested drugs.

FIRE

A postcrash fire to the Cessna airplane was the result of ruptured fuel tanks combining with a spark from an undetermined source.

ADDITIONAL DATA/INFORMATION

The wreckage of both airplanes was released to Mr. James Brewer, of In-Flite Aviation on June 6, 1997.

Pilot Information

Certificate:	Private	**Age:**	52, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	02/20/1996
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	1240 hours (Total, all aircraft), 1134 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N804DA
Model/Series:	J3C-65 J3C-65	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	5767
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	09/27/1996, Annual	**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:	10 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	4611 Hours	**Engine Manufacturer:**	Continental
ELT:	Not installed	**Engine Model/Series:**	A-75-8-F
Registered Owner:	POLYSPRAY CORP	**Rated Power:**	75 hp
Operator:	JIMMIE R. PEDDYCORD	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	GSO, 926 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	1754 EDT	**Direction from Accident Site:**	332°
Lowest Cloud Condition:	Unknown / 0 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	Overcast / 3000 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	18°C / 11°C
Precipitation and Obscuration:			
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	1749 EDT	**Type of Airspace:**	Class G

Airport Information

Airport:	COLE RIDGE	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	TIMOTHY W MONVILLE	**Report Date:**	05/21/1998
Additional Participating Persons:	WILLIAM R NEWBY; WINSTON-SALEM, NC		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		